



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

21 November 2005

CRUISE RESULTS

NOAA FRV ALBATROSS IV
Cruise No. AL IV 05-06
(Parts I-III)
Sea Scallop Survey

CRUISE PERIOD AND AREA

The cruise period was 6 July - 12 August 2005 and was divided into three parts. Part I was from 6-7, 13-22 July; Part II, 25 July - 5 August; Part III 8-12 August. The area surveyed was from North Carolina to Georges Bank. Sampling depths ranged from 28 to 110 meters (15 to 60 fathoms). Approximate station locations are shown in Figures 1 and 2.

OBJECTIVES

The objectives of the survey were to: (1) determine the distribution and relative abundance of the sea scallop, *Placopecten magellanicus* and Iceland scallop, *Chlamys islandica*; (2) collect biological samples and data relative to assessment needs; (3) monitor hydrographic and meteorological conditions; (4) collect biological samples requested by scientists at various research institutions and laboratories; (5) determine bottom contact of the research scallop dredge using a deployable inclinometer sensor; (6) validate the inclinometer with the use of an underwater camera system; (7) quantify the selectivity and catchability of the scallop dredge with and without rock chains; (8) collect Paralytic Shellfish Poisoning (PSP) samples .

METHODS

Operations and gear for cruise AL IV 05-06, Parts I, II and III conformed with the Cruise Instructions for the Sea Scallop Survey, dated 4 May 2005 with the following exceptions: Leg I left one day late and returned for 5 days mid-cruise due to ship mechanical problems. Due to the lost days from Leg I, Leg III was added.

Pre-selected random stations were sampled using a standard 2.44 meter (8') wide New Bedford type scallop dredge rigged with 5.1 cm (2 inch) diameter rings and lined with at 3.8 cm (1½ inch) polyethylene stretched mesh liner. Tow duration was 15 minutes; tow speed was 3.8 knots

and the dredge was fished using a 3:1 wire out to depth scope. A recording inclinometer was mounted on the dredge to collect bottom contact time data. Tow distance was recorded using differential GPS.

The entire catch was sorted at each standard station into biological and habitat components. Live whole and clapper shells of both sea and Iceland scallops were measured on Limnoterra boards to the nearest millimeter. Selected fish species caught incidentally in the dredge were also measured to the nearest millimeter. Weights and total numbers were recorded for all other fish species at each station. Cancer crabs and starfish weights and total numbers were recorded at every third station. Habitat portions were estimated by volume and discarded.

Surface temperatures were measured using the hull-mounted temperature sensor at a depth of three meters and logged by the Scientific Computer System (SCS) at all stations. Temperature and conductivity profiles were made at approximately every third station using a conductivity, temperature, and depth instrument (CTD). A bottom salinity sample was obtained twice a day to calibrate the CTD. Water samples were also taken for fluorometer calibrations. GMT time was used throughout the survey.

RESULTS

There were a total of 538 stations occupied during the cruise with 226, 247, and 65 dredge hauls made on Parts I, II and III respectively. There were a total of 23 occurrences of dredge flips (stations were retowed in most cases). Bottom temperatures were collected at 173 stations using the CTD system. Bottom water samples for CTD calibration were taken at 42 stations. Seven stations included comparison scallop measurements. These measurements were done to compare the Limnoterra board measurements (measured to the nearest millimeter) to the manual scallop board measurements (measured in five-millimeter length intervals). During Part II, there were a total of three paired rock chain dredge hauls conducted. These were considered part of the ongoing project to develop a calibration factor in the Great South Channel. These pairs will be used in the future to expand the use of the rock chain dredge during the standard scallop survey. There were eleven Survey Precision tows performed in requested areas in order to get an accurate estimate of abundance. Table 1 lists the major samples collected for various studies.

DISPOSITION OF DATA

Catch data and hydrographic data will be analyzed at the NEFSC Laboratory in Woods Hole, Massachusetts. The various collections were forwarded to researchers listed in Table 1. Resulting data will be audited, edited, and archived in the NEFSC Fisheries Scientific Computer System (FSCS) database.

SCIENTIFIC PERSONNEL

National Marine Fisheries Service, NEFSC , Woods Hole, MA

Linda Despres, Chief Scientist ³	Devorah Hart ²
Victor Nordahl, Chief Scientist ²	William Kramer ³
Stacy Rowe, Chief Scientist ¹	Stacy Kubis ³
Larry Brady ^{1,2}	Sean Lucey ^{1,2,3}
Joe Deppen ¹	Katherine McArdle ²
William Duffy ²	Sarah Pregracke ³
Jonathan Duquette ¹	

National Marine Fisheries Service, NERO, Gloucester, MA

Kelly Crawford³

Contractors

Christianne Arnold ³	Woods Hole, MA
Jakub Kircun ^{1,3}	Woods Hole, MA
Kris Ohleth ^{1,2}	Woods Hole, MA
Erin Riley ²	Woods Hole, MA
Avis Sosa ^{1,2}	Fort Collins, CO

Volunteers

Cary Ann Atwood ²	Grand Junction, CO
John Del Gaizo ³	Islip, NY
Joy Higgins ³	Plymouth, MA
Maria Jacob ^{1,3}	Medford, MA
Lara Jarvis ^{1,2}	Nashville, NC
Jennifer Kelly ¹	Garrison, NY
Trevor Kenchington ³	Nova Scotia, Canada
Nikolai Klibansky ²	Amherst, MA
Linda Morgan ^{1,3}	Havre de Grace, MD
Dave Rudders ³	Williamsburg, VA
John C. Sammons ²	Chesapeake, VA
Cindy Travers ¹	New London, CT
Noelle Yochum ²	Hayes, VA

¹6-7, 13-22 July

²25 July - 5 August

³8-12 August

For further information contact: Russell Brown, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1097. Phone (508) 495-2380; FAX (508) 495-2258; Russell.Brown@noaa.gov. The Cruise Results and Resource Survey Report for this survey can be viewed at [NEFSC Ecosystems Survey Branch webpage..](#)

Table 1. Special samples obtained for various investigators on FRV ALBATROSS IV Cruise 05-06, Sea Scallop Survey, during 6 July-12 August, 2005.

Investigator and Affiliation	Samples Saved	Approximate Number
Russell Brown, NMFS, NEFSC, Woods Hole, MA	Ocean quahog	28 indiv.
	Sea scallops	23 indiv.
John Burnett, NMFS, NEFSC, Woods Hole, MA	Goosefish vertebrae	71 indiv.
Michael Fine, Virginia Commonwealth Univ., Richmond, VA	Fawn cusk-eel	2 indiv.
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Various species	93 indiv.
Devorah Hart, NMFS, NEFSC, Woods Hole, MA	Scallop shells/meat weights	1825/1625 indiv.
	Preserve meat	12 indiv.
	<i>Asterias</i> spp.	3965 indiv.
	<i>Astropecten</i>	14 samples
William Kramer, NMFS, NEFSC, Woods Hole, MA	Sea scallops	249 indiv.
	Icelandic scallops	5 indiv.
Jason Link, NMFS, NEFSC, Woods Hole, MA	Goosefish stomachs	43 indiv.
Tiffany Vidal, NMFS, NEFSC, Woods Hole, MA	Various species	128 indiv.
Paul Nitschke, NMFS, NEFSC, Woods Hole, MA	Cunner	3 indiv.
Avis Sosa, NMFS, NEFSC, Woods Hole, MA	Various species	50 indiv.
Richard Taylor, WHOI, Woods Hole, MA	Sea scallops	1435 indiv.

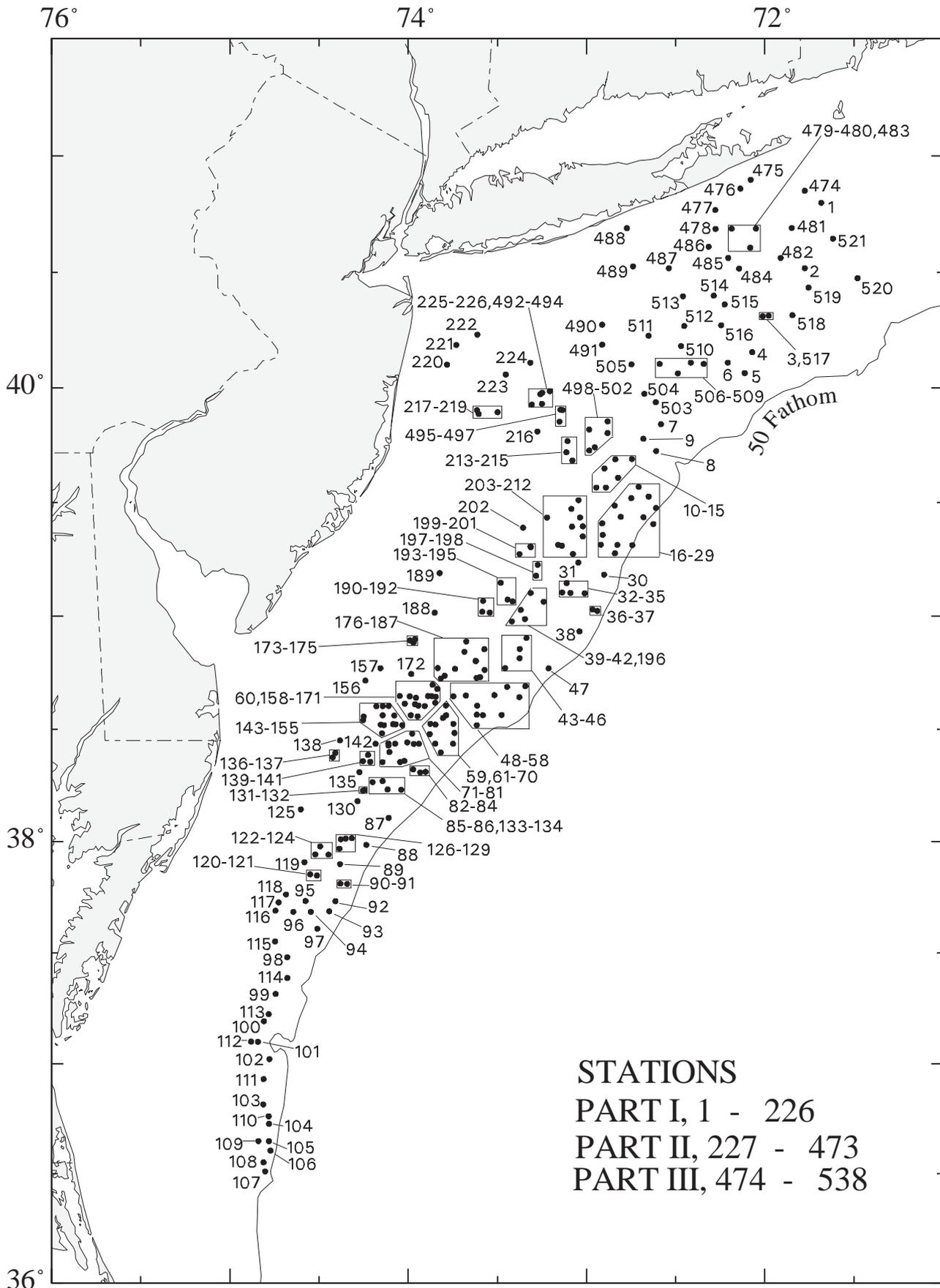


Figure 1. Dredge tows from the R/V ALBATROSS IV (05 - 06), during NOAA Fisheries Service, Northeast Fisheries Science Center, Sea Scallop Survey, July 6 - August 12, 2005.

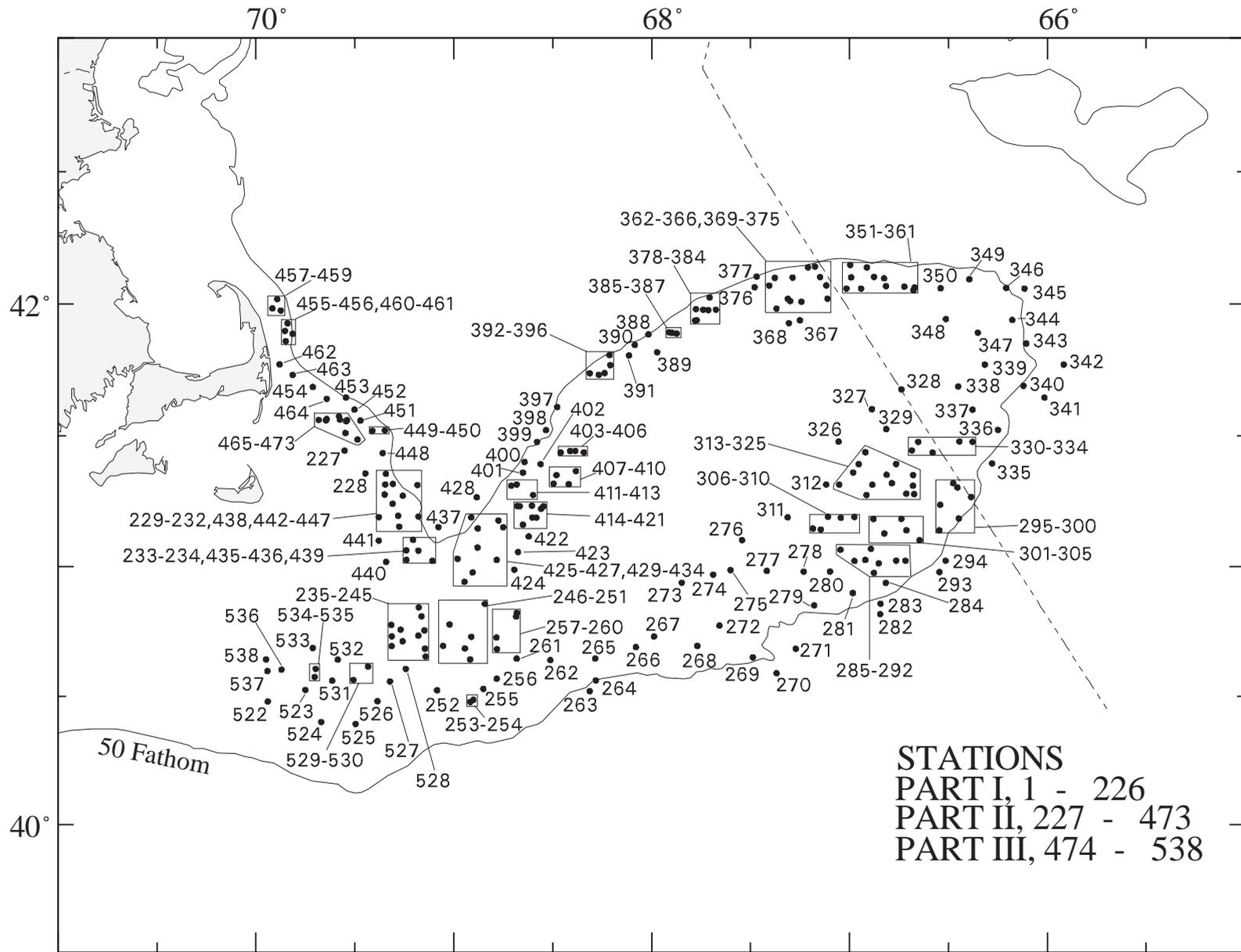


Figure 1. Dredge tows from the R/V ALBATROSS IV (05 - 06), during NOAA Fisheries Service, Northeast Fisheries Science Center, Sea Scallop Survey, July 6 - August 12, 2005.